

Pattern of Suicide Amongst Young Females in South India

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Abstract

Background: Suicide is a major public health problem and top three causes of death among youth worldwide. As per WHO, almost around one million people die every year from suicide and almost twenty times more people attempt suicide. **Place of Study:** Department of Forensic Medicine and Toxicology at Gandhi Medical College, Musheerabad, Secunderabad, Hyderabad. **Study Design:** Hospital based cross-sectional study. **Material and Method:** The materials comprised 100 autopsy cases of suicidal deaths of females of 12 to 24 years ages, out of various autopsies done in our mortuary. **Observation and Discussion:** The highest numbers of cases were recorded in the 19-24 group i.e. 49 cases (49%). Hanging was the most commonly adopted method for committing suicide i.e. 53% of deaths. The other means adopted for committing suicide in the decreasing order of percentage of deaths are as follows: self-immolation 30% deaths, poisoning 13% deaths, drowning 2% deaths, and fall from height and railway injuries sharing 1% each. As per our findings, in 24% of the death cases, the motive behind the suicide is not known. Three times higher is the suicide death rate amongst women in India in comparison with the rate globally in terms of similar geographical levels of demography index, these highlights the specific needs to understand better the various determinants of suicides among women's of India. **Conclusion:** Disproportionate high suicide rate amongst young females in south India is a public health crisis. A specific attention is required for suicides among young females in south India, as such suicide ranks and the lead cause of death amongst young adults in country.

Keywords: Females; Suicide death rate; Autopsy.

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Introduction

Suicide is a major public health problem and top three causes of death among youth worldwide. As per WHO, almost around one million people die

every year from suicide and almost twenty times more people attempt suicide. 16 per 100,000 or one death every forty seconds is a global mortality rate and one attempt in every three seconds on an average. Worldwide suicide was estimated to represent 1.8% of the total global burden of disease in 1998, and it is expected that by 2020 the figure may come as around 2.4% especially in countries with market and former socialist economies [1]. It is estimated that around 55% suicides occur worldwide between the age of 15 to 44 years and suicide is the second most leading cause of death among youth [2].

The increasing suicide rates in India are similar with the global trend. Young people are a notably vulnerable group and around 34.5% suicides reported were among youth [3]. One of the Indian studies mentioned that the suicides among young people aged 15-29 years about 38 per 1,00,000

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population. Literatures suggest that attitudes, opinions, perceptions and socio-cultural differences are some of the reasons for variations in suicide rates as well as suicidal behavior [4-5].

Attitudes are the fundamental element in a socio-psychological model for predicting human behavior. They can have a positive and negative influence on behavior [6]. Suicidal attitudes and the ideology behind it are key factors in understanding pathways and mechanisms that might lead to suicide [7].

The number of suicides and suicidal behavior among adolescents are increasing rapidly. The results of a 2012 lancet study on death by suicide in India exposed a shocking trend of suicide among adolescents [8]. Adolescence is a stage of transition which needs mental capacity, personality building and social adaptation. It has been evidenced that there is often a pressure to succeed over academics, relationship and self-identity during adolescence. Failure to overcome these challenges may lead to psychological distress and suicide [9,10]. The aim of the current study was to analyze differences in the characteristics of suicide, various methods adopted and to identify precipitating causes for suicide, by young people below the age of 25 years by comparing three age groups: 12-14 years (children/early adolescents), 15-19 years (late adolescents) and 20-24 years (young adults) [11].

Materials and Methods

The present study is hospital based cross-sectional study which was carried out in the Department of Forensic Medicine and Toxicology at Gandhi Medical College, Musheerabad, Secunderabad, Hyderabad. The materials comprised 100 autopsy cases of suicidal deaths of females of 12 to 24 years ages, out of various autopsies done in our mortuary. These 100 autopsy cases of suicidal deaths had taken as study population irrespective of race, religion and caste after taking detailed informed written consent from next to kin of the deceased. Information regarding the name, age, address, occupation, education, socio-economic status, marital status, history of death, apparent motive and the circumstances leading to such deaths of deceased were collected from the relatives/friends of the deceased, hospital records and the concerned investigating agencies. Other information like cause of death from the autopsy reports and final cause of death formed from the reports of samples and viscera, subjected to chemical analysis, histopathological examination

and other investigations. Proforma for study was prepared and all collected data were put into the master-chart, which was prepared and then feed into the computer in Excel worksheet.

Inclusion Criteria

All types of suicidal deaths of females in the age group of 12-24 years which include, hanging, self-immolation, poisoning, drowning, railway injuries, jump from height, self-cut throat, self-stabbing, suicidal firearms, deliberately planned road accidents, etc.

Exclusion Criteria

Advanced decomposition cases where cause of death could not be determined, Isolated deaths where proper evidence was not procured, Properly documented homicidal and accidental deaths, Poisoning cases where Chemical Analysis Report of Forensic Science Laboratory was negative and Suicidal deaths of males and other genders were excluded from the study.

Statistical Analysis

The data obtained from the study will be evaluated and statistical analysis will be carried out by using Epi6 software.

Results

The study group has been divided into 3 sub-groups i.e., 12- 15, 16-18, 19-24 Years. As per the fig No 1 the highest numbers of cases were recorded in the 19-24 group i.e. 49 cases (49%). Followed by 16-18 Years group which recorded 38 Cases (38%) and the least number of cases were seen in 12-15 Age group with 13 Cases (13%). In further, Hindu & Muslim, highest number of cases were recorded in the Hindu group i.e. 94 cases (94%), followed by Muslim group which recorded 6 Cases (6%). During the study, most of the deaths were noted during the day time (72) compared with night time (27). Most of the deaths were noted in the Middle Class up to 57% deaths, followed by Lower class i.e., 40% and least deaths are seen among the upper class group i.e., 1%. In the present study more deaths are seen more among the persons who were single i.e., 80% deaths when compared with married women i.e., 18% deaths. Deaths were noted in students (55%) followed by Employees & House wives (13%), Laborers (9%) followed by unemployed women (7%) and 3% in Occupation not known category.

As per this study, students are the most vulnerable category to commit suicide.

According to the present study, most deaths were noted amongst Graduates (32%) which is followed by Intermediate students (22%) followed by school children (19%), the least percent was in Illiterate (9%) and 18% in Not known category. As per our observation in study most of the deaths did not have any History of previous attempts of any sort numbering up to 91%. Followed by those cases where there was a history in families (5%), the least number of deaths are seen in those who showed previous attempts on self. i.e., 2% Deaths. 7% of the suicidal deaths occurred during menstruation. Pregnant women who committed suicide were in the last position with 1% deaths. Most of the deaths were seen in Hormonal status-Not Known (NK) - 92%. Most of the cases were noted in Immediate Suicidal deaths (55%) and those who were admitted in hospital and survived between one day to one week accounted for 27%,

followed by deaths that occurred in less than 01 day (13%). The least survival period was observed in more than one week category (5%). In our findings, Hanging was the most commonly adopted method for committing suicide i.e. 53% of deaths. The other means adopted for committing suicide in the decreasing order of percentage of deaths are as follows: self-immolation 30% deaths, poisoning 13% deaths, drowning 2% deaths, fall from height and railway injuries sharing 1% each. As per our findings, in 24% of the death cases, the motive behind the suicide is not known. In the remaining deaths, the leading motive behind the suicide is emotional disturbances amounting to 21% deaths. The other motives in the decreasing order of frequency are illness and love related issues sharing 13% each, failure in exams and economic problems sharing same percentage i.e. 9%, marriage related issues i.e. 6% of deaths, harassment for dowry i.e. 4% deaths and the least motive behind the suicide is death of a dear one i.e. 1% of deaths.



Fig 1: Distribution of Study Population According to Age

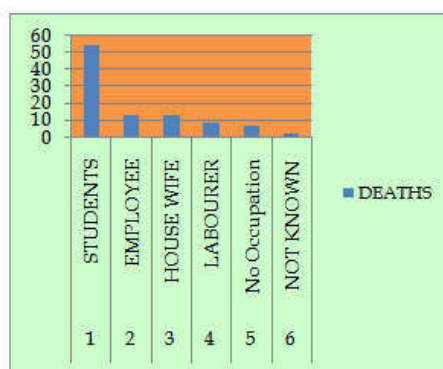


Fig. 2: Distribution of Study Population According to Occupation.

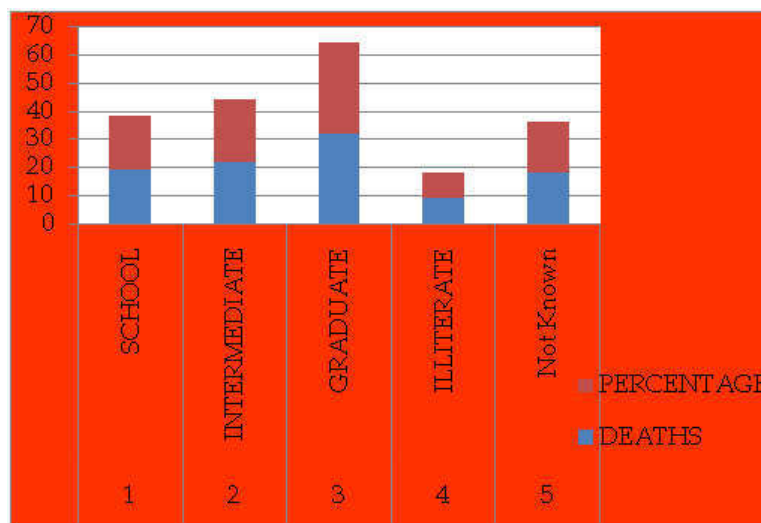


Fig. 3: Distribution of Study Population According to Education

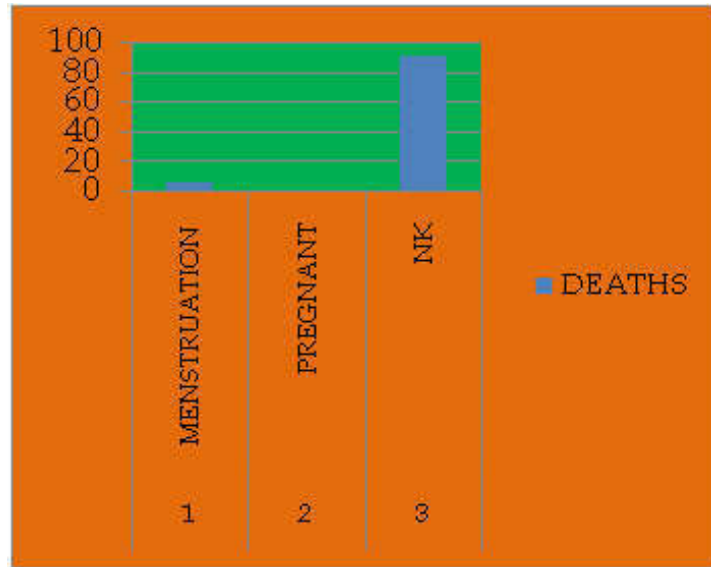


Fig. 4: Distribution of Study Population According to Hormonal Status

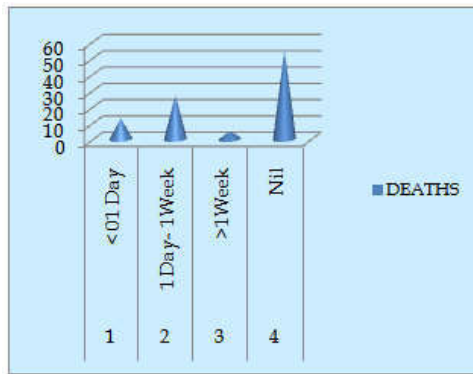


Fig. 5: Distribution of Study Population According to Survival Period

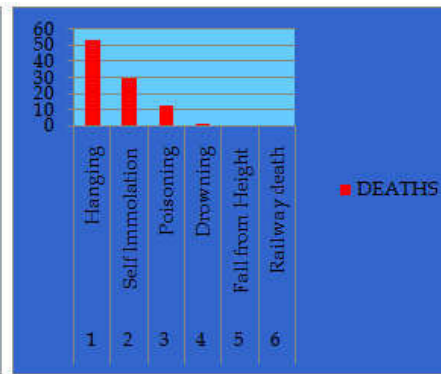


Fig. 6: Distribution of Study Population According to Cause of Death.

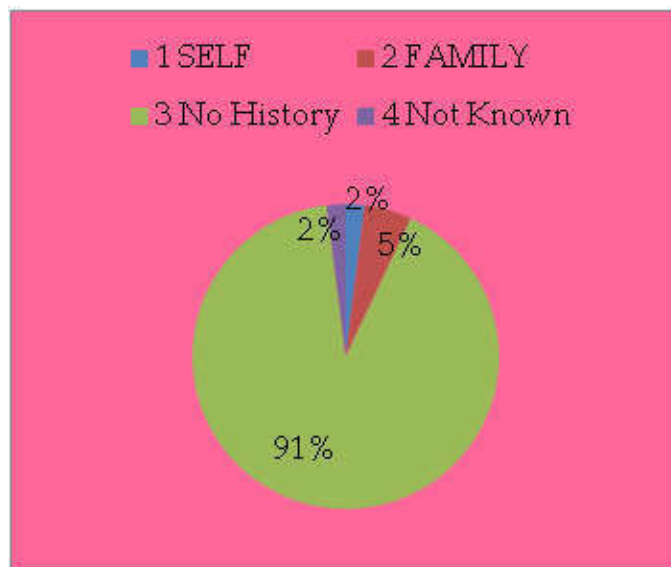


Fig. 7: Distribution of Study Population according History of Previous Attempts.

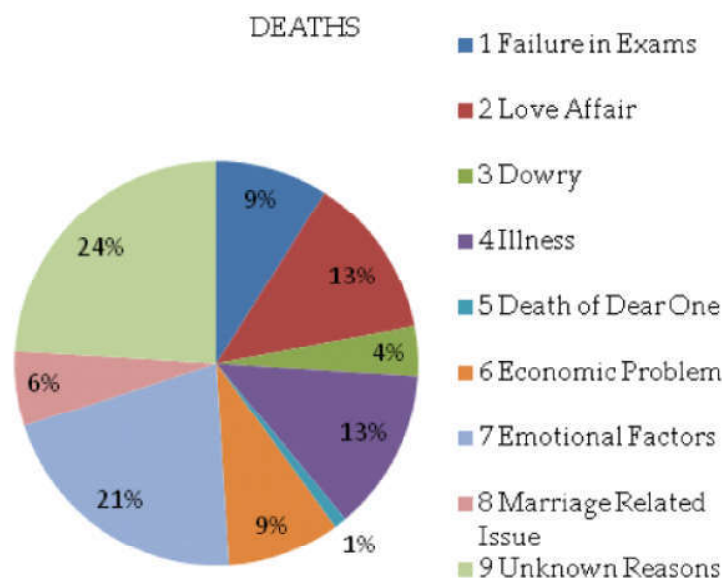


Fig. 8: Distribution of Study Population According to Motive behind the Suicide.

Discussion

In 2016 around 17.8% of the global population was from India, but it accounts nearly 36.6% of suicide deaths among women and 24.3% from men. Since 1990 the proportion of global suicide had increased for both sexes in India, but it accounted more for women in comparisons to men. Especially the young adults have been succumbing to suicide and taking their lives in alarmingly high numbers leading to a health crisis. In India suicide ranks first as the manner of death in the age groups of 12 to 29 years and 15 to 39 years.

Increasing suicide death rate is being observed among the elderly in recent years shall pose additional challenges. Suicide related death for women in India was higher in 1990s than comparison to men, which converge in 2001 and then diverging from 2002 with a decrease in the rate for women, however the rate in men continued to be stagnant.

India’s men to women suicide death ratio were comparatively lower than the global ration in 2016, suicide death rate in most of the countries is higher in men in comparison to women’s. Several theories had been proposed with modernization as tested globally based on the hypothesis that it affects men and women differently with conflicting results [12,13,14,15]. It is also speculated that these gender differences shall be relatively less pronounced if it be compared with the suicide attempts as women make more suicide attempts than men, but men are more likely to die in their attempts as they are more

successful in accomplishing the task whereas for women’s it ends mostly with parasuicide [15].

Three times higher is the suicide death rate amongst women in India in comparison with the rate globally in terms of similar geographical levels of demography index, these highlights the specific needs to understand better the various determinants of suicides among women’s of India.

In India it is seen that married women accounted for the maximum proportion of suicides deaths [16,17], it is being concluded that marriage is known to be less protective against suicide for women, the reason cited are arranged and early marriage leading to young motherhood, low socioeconomic status, economic dependence and vary prominently domestic violence [12,17,19,20,21]. The introduction of Protection of Women from Domestic Violence Act PWDVA has been in place in India since 2005, and it would be prudent to understand the effect it has had on suicide prevention among married women [22].

Specifically a lesson shall be learn from china, who was once a leader in female suicide related deaths in 1990, on the contrary it reduced almost around to 70% by 2016 [1,23]. However the suicide amongst men of India did not change a much, rather remained stagnant, but it remain higher than the global average, although it is not that striking in comparison to female suicides [1]. The reason stated for the high rates of suicides and stagnancy amongst men of India could be that the suicides of farmers have received attention from the law and policy makers which had been

very well highlighted by media too. Perhaps the persistent high rate amongst men of India needs to be definitely addressed [17,18,24,25].

Conclusion

In conclusion, the cause of death profile is considered to be an important set of public health information and it forms the cornerstone of the health information system. Disproportionate high suicide rate amongst young females in south India is a public health crisis. A specific attention is required for suicides among young females in south India, as such suicide ranks and the lead cause of death amongst young adults in country. At provincial level health planning and decisions on intervention strategies is required. A low indicator of suicide death in females shall be described in favor of peace harmony and happiness in society as well in state and country. A national suicide prevention strategy is needed as a guide, which then has to be adapted at the state level to take into account the wide variations in trends between the states and the context of each state to reduce the burden of suicide deaths in India.

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References

- World Health Organization. Suicide rates per 100,000 by country, year and sex. [Last accessed on 2012 Mar 27]. Available from: http://www.who.int/mental_health/prevention/suicide_rates/en/index.html.
- Suicide Statistics | Befrienders [Internet]. [Cited 2016 Nov 8]. Available from: <http://www.befrienders.org/suicide-statistics>.
- Suicide: An Indian perspective [Internet]. [Cited 2016 Nov 8]. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3554961/>.
- Attitudes toward suicide among college students in South Korea and the United States [Internet]. [cited 2016 Nov 8]. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4025558/>.
- Adolescents' attitudes toward suicide, and a suicidal peer: a comparison between Swedish and Turkish high school students. - PubMed - NCBI [Internet]. [cited 2016 Nov 8]. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/7644900>.
- Arnautovska U, Grad OT. Attitudes towards Suicide in the Adolescent Population. Thesis.
- Ghasemi P, Shaghaghi A, Allahverdi-pour H. Measurement Scales of Suicidal Ideation and Attitudes: A Systematic Review Article. Health PromotPerspect. 2015 Oct 25;5:156-68.
- India Together: Where the young don't want to live: ShambhuGhatak 19 July 2013 [Internet]. [cited 2016 Nov 11]. Available from: <http://indiatogether.org/suicide-society>.
- Adolescent's suicide attempts: populations at risk, vulnerability, and substance use. -PubMed - NCBI [Internet]. [cited 2016 Nov 11]. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/14582573>.
- Associations between suicidal high school students' help-seeking and their attitudes and perceptions of social environment.-PubMed - NCBI [Internet]. [cited 2016 Nov Available from: <https://www.ncbi.nlm.nih.gov/pubmed/22562217>.
- National Mental Health Survey of India - 2015-2016. Available from: <http://www.nimhans.ac.in/sites/default/files/u197/NMHS%20Report%20%28Prevalence%20patterns%20and%20outcomes%29%201>.
- WHO. Preventing suicide: a global imperative. Geneva: World Health Organization, 2014.
- Mayer P. Suicide and society in India. New York: Routledge, 2012.
- Steen DM, Meyer P. Modernization and the male-female suicide ratio in India 1967-1997: divergence or convergence? Suicide Life Threat Behav 2004;34: 147-59.
- Vijayakumar L. Suicide prevention: beyond mental disorder. Indian J Psychol Med. 2016;38:514-16.
- Patel V, Ramasundarahettige C, Vijayakumar L, et al. Suicide mortality in India: a nationally representative survey. Lancet. 2012;379:2343-51.
- Dandona R, Bertozzi-Villa A, Kumar GA, Dandona L. Lessons from a decade of suicide surveillance in India: who, why and how? Int J Epidemiol. 2017;46: 983-93.
- Arya V, Page A, River J, Armstrong G, Mayer P. Trends and socio-economic determinants of suicide in India: 2001-2013. Soc Psychiatry Psychiatr Epidemiol. 2018;53:269-78.

19. Vijayakumar L. Indian research on suicide. *Indian J Psychiatry*. 2010;52 (suppl 1):291-96.
20. Vijayakumar L. Suicide in women. *Indian J Psychiatry*. 2015;57(suppl 2):233-38.
21. Gururaj G, Isaac MK, Subbakrishna DK, Ranjani R. Risk factors for completed suicides: a case-control study from Bangalore, India. *Inj Control Saf Promot* 2004;11:183-91.
22. Government of India. The Protection of Women from Domestic Violence Act. 2005. <http://ncw.nic.in/acts/TheProtectionofWomenfromDomesticViolenceAct2005.pdf> (accessed March 2, 2018).
23. Weiyuan C. Women and suicide in rural China. *Bull World Health Organ*. 2009;87:888-89.
24. Merriott D. Factors associated with the farmer suicide crisis in India. *J Epidemiol Glob Health* 2016;6:217-27.
25. Mitra S. Are farmers' suicides in India hyped to divert funds, attract attention? 2015. <http://www.firstpost.com/politics/are-farmerssuicides-in-india-hyped-to-divert-funds-attract-attention-2212908>. Html (accessed March 3, 2018).

